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Air and Water Pollution: A Visual Communication on Pollution

James Parton

"Air and Water Pollution"

A Visual Communication
on Pollution

by
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Master of Fine Arts in
the College of Fine and
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Date: August 4, 1967

Adviser: Mr. Hans Barschel

Dedication

To my wife Nancy and to
Mr. Barschel for their
patience and understanding.

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Prologue

There was a time when man could say "as free as the air" or "as pure as the water" but that time has come to an end. Man has destroyed the meaning of his own expression. To those of us who can remember the good old days of the old swimming hole, of the fresh clean smell of the air in the early morning and the smell of fresh mown hay in the late afternoon, these are but lingering memories. The old swimming hole is now filled with industrial waste from the factory upstream and the air carries the smell of industrial smoke and the exhaust fumes of the automobile. I can well remember the cool feeling of the water running over my bare feet and that first dip in the creek in the spring of the year. Now as I look at the gray muddy color of that very same stream I am filled with nostalgia, for this stream will never be the same again.
Never again will it hear the laughter of children wading along its banks or their splashing as they swim through its waters.

With the coming of the industrial revolution and man's methods of taking short cuts, he has dumped hundreds of thousands of tons of waste materials into the streams of our country. In doing this he has not only cut down on our fresh water supply but he has killed of much of the marine life in lakes and streams. In his mad drive for better transportation he has filled the air with deadly carbon monoxide gas creating not only a health hazard for himself but for wildlife as well. Man now spends almost as much for doctor bills and medicine as he is spending for food. His only recourse now is to take stock of the situation and start cleaning it up.

It wasn't until the mid 1950's that man really started to think about the problems of pollution and even now he is just giving them "lipservice and verbal gymnastics". It has been said that if we wait another twenty-five years we will have waited too long. For in that time our air will be polluted to the danger point and our water will be generally

unfit for consumption. The larger industrial firms of our country are working on ways to cut down on air and stream pollution, but for the most part they are making but a small dent in the problem. The auto industries are working on an electric car to curb air pollution from the exhaust of automobiles. They too are a long way off, at least ten years at the earliest. What can we do? As an individual you can write to your local newspaper stating your concern. You can also write to your state senator and to your congressman asking for state and federal laws to curb this monster called pollution. Others have done this quite effectively. The problems of pollution have, in some communities, become a political football. The city of Pittsburgh, Pennsylvania, cut the pollution problem considerably. They have demonstrated that a community that wants pure air, demands pure air, and will be satisfied with nothing less than pure air, can overcome any obstacles which may arise.

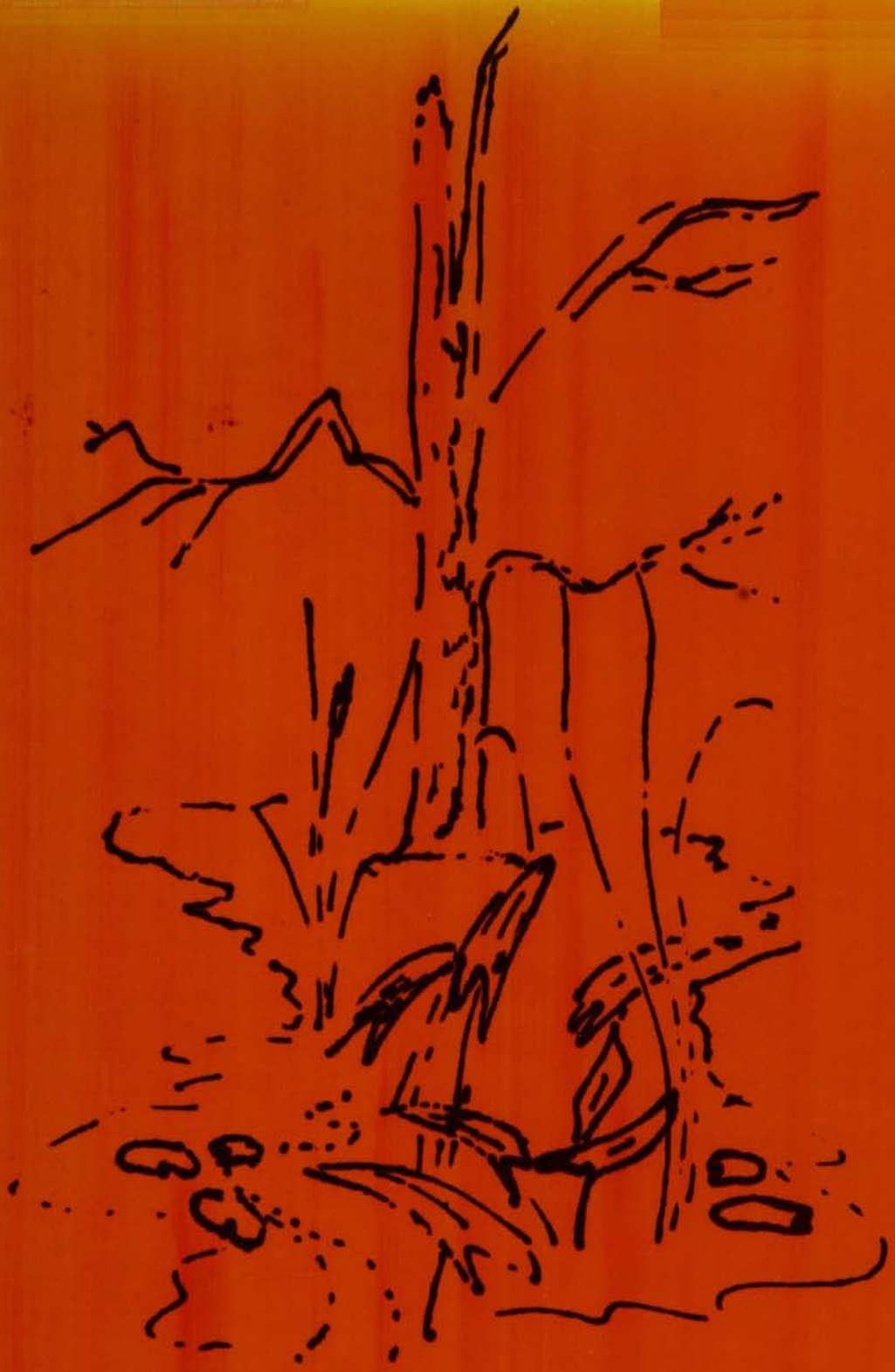
In the late 1950's a city by the name of Santee, California, found that it was too costly to keep buying more and more water each year. They would use it once and then discharge it into filter plants and then into streams. They found that raw sewage is 99.9 percent pure water and that removing the impurities is one of the less difficult water cleaning jobs. The most difficult job was to sell the public on the idea of reused water. With the help of the state, federal and local governments they have developed a method of cleaning out all of the impurities. They are now using it over again, not only for recreational purposes but for drinking too. Pollution cannot be ignored any longer by the politician. An aroused community can bring it to an end.

Introduction

The purpose of this thesis is to present a graphic design and educational communication display that will point out the urgency for better controls and understanding of our air and water supply to preserve our natural resources for both man and wildlife. It is not my intention to solve all of the problems of air and water pollution. This would take a great deal of money, time, study and research by a great number of people. In the past months I have written many letters to various groups and individuals, and some of these have been used in this report. I have taken well over two hundred photographs of streams, rivers, lakes, ponds, and the city sky (from both the ground and from the air). Many of these have been used throughout the report.

I believe that the answer is not in how many laws we can make to control pollution but in educating our youth. Of all of the reports, news clippings and articles that I have read on the subject of pollution, Ernest Swift of

the National Wildlife Federation came out with the best solution. "If there is any solution to this involved subject, that solution is in the field of education, and it commences with the child. Educators hold the destiny of this nation in the hollow of their hands, not only to teach a basic appreciation of resources but all other values to which we subscribe".



Exposition

May 8, 1967

Citizens Committee on Natural Resources
1346 Connecticut Avenue
710 Dupont Circle Bldg.
Washington, D.C.

Dear Sir:

I am a graduate student at the Rochester Institute of Technology in the school of design. This summer I will be completing my Masters thesis on Air and Water Pollution.

I would appreciate your help with the above thesis. I am looking for any materials that you might have on the above subject such as ; phamplets, posters, articals, seals or any other illustrative materials that you would be able to send me.

Sincerely,

James R. Parton

James R. Parton

CITIZENS COMMITTEE ON NATURAL RESOURCES

1346 Connecticut Ave., N.W. • 712 Dupont Circle Building
Washington, D.C. 20036
387-1261

May 10, 1967

Mr. James R. Parton

Dear Mr. Parton:

With reference to your letter of May 8 requesting materials on air and water pollution, I am taking the liberty of enclosing Dr. Spencer M. Smith, Jr.'s testimony on this subject before the Senate Public Works Committee, in the hope that they will prove helpful to you.

We are a legislative action group, hence do not keep for distribution such pamphlets, posters, etc. that you requested. Thank you for your interest.

Cordially,

Audrey M. Lemucchi

Audrey M. Lemucchi
Secretary to
Dr. Smith

CITIZENS COMMITTEE ON NATURAL RESOURCES

1346 Connecticut Ave., N.W. • 712 Dupont Circle Building
Washington, D.C. 20036
387-1261

Statement of Dr. Spencer M. Smith, Jr., Secretary of the Citizens Committee on Natural Resources before the Subcommittee on Air and Water Pollution of the Senate Public Works Committee – May 4, 1967

Re: Amendments to the Clean Air Act

Mr. Chairman and Members of the Committee:

I am Dr. Spencer M. Smith, Jr., Secretary of the Citizens Committee on Natural Resources, a national conservation organization with offices in Washington, D. C.

We are pleased to have the opportunity of presenting our views to this distinguished Subcommittee. If my subsequent comments suggest frustration and impatience with the efforts to date in combatting the significant and pervasive problem of air pollution, it is not to suggest any lack of respect or appreciation for the outstanding efforts of the Chairman and Members of this Subcommittee. We are most sincere in commending this Subcommittee for the outstanding leadership, courage and patience it has shown in undertaking the important remedial programs so necessary to the health and welfare of our society.

Thus, our criticisms are, we are sure, more in commiseration with the Subcommittee, than in criticism of their efforts. Perhaps the longer experience we have had in dealing with water pollution should have extended our patience and caused us to appreciate the need for due deliberation. The opposite effect has resulted, however, inspired perhaps by the similarity of the struggle to improve water quality and the longtime efforts that are far from solution.

We do not doubt the necessity for the needed research in this important area. Neither do we suggest that an understanding of the economic impact upon industry, the automobile, and other activities that cause pollution should not be considered fully. In indicating this concern, however, we cannot help but be taken with the fact that we are not only far behind in our efforts but there is little evidence, when viewed realistically, that we are closing the gap between our performance and the need that exists for remedial action.

The need for research should be judged on its own merit and should not be used as an excuse to delay, unduly, action programs. We hasten to add that we would be hard-pressed to identify specific areas, point to specific programs, and quantify the results with any surety. We have, nevertheless, a great uneasiness that the end results of our activities progress most slowly.

The matter of funding has been and will continue to be a problem. Under the existing Clean Air Act of 1963 we are spending approximately $25 million in matching grants to cities and States. From this, however, no effective regional programs have been developed and only 80 new local air pollution programs have been established. Unless vigorous Federal activity, properly funded, is pursued in the near future, a real question can be raised as to whether a significant improvement in air quality can be achieved in this generation. To be sure, greater local and State efforts should be increased and form an integral part of any ongoing program but the nature of the problem is such that without significant Federal leadership the task will not be done.

The principal concern to which our efforts should be directed is establishing effective air quality criteria. In the establishment of such criteria, we hasten to draw a specific distinction between the establishment of criteria and the establishment of standards. There has been for some time a discussion as to when the economic impact or consequences of control policy should be considered. It has been our judgment that in effecting air quality criteria that no economic factors should be considered. This is not to say that the economic impact in determining air quality

standards should not be a factor in the final judgment. It is impossible, however, in our judgment, to consider economic factors at the time of determining air quality criteria. A complete scientific determination, as pure and unfettered as can be achieved, should be the course of action in establishing air quality criteria. It is necessary in establishing enforceable standards, however, that all factors be included - air quality criteria and economic considerations among them - in order that the total public welfare be served.

It is difficult for us to see how national standards for the control of industrial emissions can be effective. It would appear that such standards would cause the minimum to be far greater than necessary or prudent in many different areas. The final result would not lend itself necessarily to a uniform improvement of air quality. The setting of such standards could just as readily lead to a national worsening of air quality as it could an improvement thereof. The determination on a regional basis of the greatest improvement in air quality would suggest a more workable program.

The suggested amendment to allow a two-year grace period for States to establish their own standards, in our judgment, would represent an unwarranted delay in effecting an improvement in air quality. It is apparent that this procedure is modelled after the Water Quality Act which allows States this prerogative. It is not our purpose to debate here the wisdom of that procedure, though the lack of acceleration in water quality improvement may be related to this program.

Also, the desire for economic expansion and development on the part of the States would be an inhibiting factor in establishing effective standards. The economic losses, due to air pollution, while real and demonstrable, are not in the proper frame of reference to be given full attention at the time of developing air quality standards.

In addition, the difference between the resources of air and water appears sufficient to mitigate against the State by State approach in the case of air quality standards. The difficulty of dealing with polluted air from a neighboring State is greater than in the case of water, since it covers a greater area and the immediate effect is more pronounced.

The delay that State standards would occasion appear greater than the two years stipulated in the amendment, though the two years will be significant with abatement actions suspended, except in the most egregious case. Beyond the two years will be the last motion, the additional negotiations between the State and Federal level, and some extensions because of particular problems. We hope the Committee will not recommend this amendment.

We support the amendment to raise the status of air pollution control from a division of the Public Health Service to an independent unit within the Department of Health, Education and Welfare. It appears to us axiomatic that a program this far reaching and so significant in affecting the entire quality of our environment should have greater status than is afforded by its present administrative posture. If the goals to which the pending legislation addresses itself are to be achieved, then certainly an increase in stature for the administering agency is warranted.

The recent amendment to increase and intensify the pollution abatement efforts relative to fuels and vehicles would strengthen the act. It is important that the best technological knowledge be applied to this and other problems of air pollution. We indicated at the outset that the use of research programs should be employed and vigorously pursued but that this process should take place solely on the merit of so doing. We have had the experience of corrective action being delayed unnecessarily because the research results were incomplete. Unfortunately, all the results are never completed at any one time and the very nature of events makes it easy to delay action that could be taken while awaiting the last and final word

from a research effort. We, of course, are not suggesting precipitous or ill considered activity in this or any other area. We are indicating, however, that time is already running out in improving air quality.

We take sharp issue with the advisability of creating industrial advisory committees for each major industrial group. We are aware of the risk of opposing such an amendment, since the charge is usually to the effect that we oppose cooperative efforts between the government and industry. From our experience, the administering agency will get plenty of advice from industry, whether they are formalized in committees or not. My own experience with advisory committees has not led me to conclude that they are representative of a compelling spirit to solve the problem with complete cooperation among all concerned. Often, such committees are made up of those upon whom enforcement impinges. The individuals composing the committees, therefore, are often a built in lobby to protect the various interests they serve.

Broadly based advisory committees composed of those who are effecting and affected by the policies promulgated are more capable, since a cross section of opinion is available to the administrator.

We support S. 780, with the suggested modifications noted above, as another necessary step along the long road to cleaner air.

Water Pollution

Water is a liquid which falls as "rain" to make streams, rivers, ponds and lakes. Water is CHEMICALLY called "H_2O". It is odorless, tasteless and transparent. It is a poor conductor but a good solvent. Water will freeze at 32^{o} F and boil at 212^{o} F and appears as liquid water, steam, water vapor and ice. Everything on Earth that lives must have water. Water is used for drinking, growing food, washing, working and playing, and that is why we have a problem.

We're running out of water because the amount of rain stays the same each year while the population keeps growing. In 1950 the United States had 150 million. Today there is around 190 million, and by 1980 there will be 260 million. Not only are there more people but there is more use per person. The per person use is up four times since 1900. Industry is up eleven times since 1900 and now uses 160 billion gallons per day. Agriculture (for irrigation use) is up seven times since 1900 and now uses 145 billion gallons per day. The total gallons used today is 355 billion

gallons and by 1980 this will jump to 600 billion gallons per day. There just isn't enough fresh water to be had.

The only practical long range solution to the problem is more re-use of the same water. The public has to be sold on the re-use of water. Millions of Americans are already drinking re-used water. It has been treated, filtered and chlorinated to insure its purity. A good example of this can be found in the April 1967 issue of the Reader's Digest. The article is titled "The Town That Launders Water". Santee, California was faced with this problem and they are now using re-used water, others can and will have to do the same.

The nation as a whole must face up to this fact. There are about 30% of our municipalities with only primary treatment plants, and these remove about 35% of organic pollutants. 50% of our municipalities have secondary treatment plants that remove about 90% of organic pollutants. Many municipalities are still dumping wastes back into the rivers and

streams untreated. Fifty million people in the U. S. are still using wells for water and cesspools or septic tanks for waste. Scientists must find ways to remove wastes that resist regular treatment and industry must come up with thousands of treatment plants.

In spite of this treatment, the water pollution of our rivers today is six times as great as it was in 1900. One only has to look at the newspaper and read; drinking water has bad taste and odor, salt brine affects water, pesticides blamed for large fish kill, bathing beaches closed, shortages of water creates hose ban and so on. WATER POLLUTION IS CAUSED BY PEOPLE--IT MUST BE CURED BY PEOPLE!!!

The individual can fight this problem three ways through their local, state and federal governments. These agencies can provide funds, make grants, conduct research, enforce laws, prepare long range comprehensive programs and provide technical assistance to the pollution problem.

Times-Union Air Photo—Wahl's Photo Service

The water discoloration (foreground) is created by treated sewage discharged into Lake Ontario by the Durand-Eastman treatment plant. The outfall enters the lake over a mile off shore. Vapors rising in background mark location of the plant where sewage is treated.

Overdue Step in Pollution Fight

The Monroe County Health Department has taken a welcome and overdue step in fighting water pollution.

The department will send a three-man technical team on annual inspections of the 36 sewage treatment plants in the county. In the past, inspections have been sporadic—usually when expansion was planned at a plant or when it was having trouble.

The only thing surprising about the announced "routine" inspections is that they're new. Surely it makes sense to check operating procedures before — not after — problems get so bad that conditions cry for correction.

By all means, then, the inspection team should closely scrutinize all public plants at least once a year. And it should take a similar critical look at waste disposal procedures of the industrial polluters as well.

Man Pollutes Even the Antarctic

It wasn't easy. But man now has found another part of the world in which he can upset the balance of nature with his pollution and heedlessness.

This time he has struck in the Antarctic.

Writing in the current Natural History Magazine, Robert Cushman Murphy of the American Museum of Natural History says that this "last outpost of nature" is being upset by oily bilge water pumped from ships' tanks into coastal waters.

Man also is endangering Antarctic wild life through "heavy reliance on eggs and seals for food on ships and at shore stations, sled dogs that eat helpless birds and threaten to become Arctic-type wolves, gaping visitors who disturb breeding cycles of penguins, and scientists who overcollect and duplicate previous work.."

The naturalist warns: "In a long-isolated realm of tenuous balance where broods are small and the dangers of immaturity extravagant, man — the new interloper — is the straw that can break the camel's back."

The major nations of the world already have agreed that no country will claim the Antarctic as its own. They have banned nuclear testing there. Perhaps now they should agree that no pollutors or senseless destroyers of the natural habitat will be allowed, either.

There always should be some vast areas left on this planet where man gives nature a chance to function undisturbed. If that can't happen in the desolate Antarctic, where can it?

Udall Cites Oil Pollution Danger

WASHINGTON (AP)— Secretary of the Interior Stewart Udall has urged Congress to come to grips with the oil pollution problem, saying "we are ill prepared to cope with a major crisis" such as that which ruined beach areas of Great Britain and France.

He told the House Rivers and Harbors subcommittee, "We are kidding ourselves if we think it can't happen here," and that a disaster of the magnitude caused by the breakup of the super-tanker Torrey Canyon off the coast of England "may happen here sooner than we think."

Udall urged a close look at all aspects of water pollution by oil, noting that a 1961 law expanded an earlier act to cover all navigable streams.

But he said neither that law nor provisions of a 1924 oil dumping act would apply to the case of a tanker which suffers damage in an accident where neither willful acts nor gross negligence can be proved.

Udall said a six-man team representing several interested government agencies went to England to study measures taken by the British during the Torrey Canyon crisis.

Anti-Pollution Measure Backed by Lawmaker

County Legislator Edward P. Mogenhan, R-24th District, yesterday urged Gov. Rockefeller to sign legislation which provides for an arithmetic average in determining coliform counts.

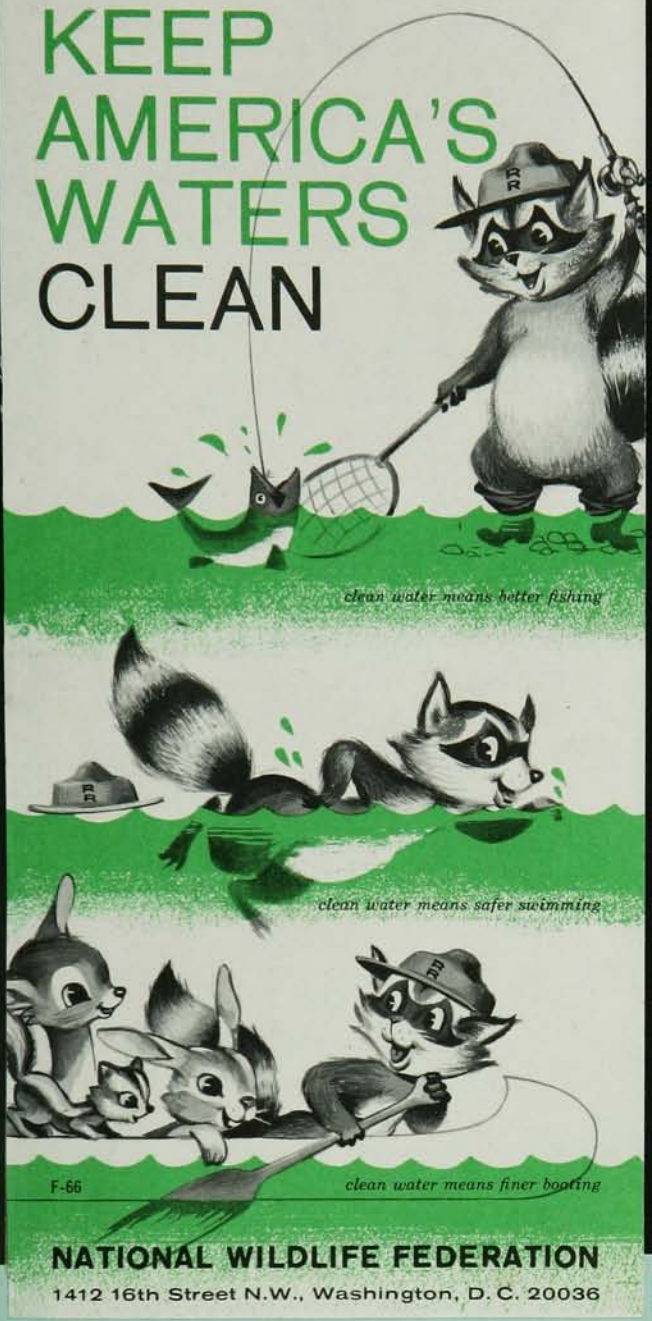
The coliform count is used to determine if Lake Ontario beach waters are pure enough for bathing.

The State Health Department has sponsored a bill, which has passed the Assembly and is awaiting Senate action, which calls for a logarithmic average in determining the count.

State Sen. Thomas Laverne of Irondequoit, R-L-50th District, and Assemblyman S. William Rosenberg of Brighton R-13th District, introduced the bill providing for an arithmetic average. They contend that the State Health Department metho dresults in a lower-distorted average.

Mogenhan wired the governor urging him to sign the Laverne-Rosenthal bill.

KEEP AMERICA'S WATERS CLEAN



clean water means better fishing

clean water means safer swimming

clean water means finer boating

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